# Book of Abstracts

## 11th International Conference on Life Cycle Assessment of Food 2018 (LCA Food)

in conjunction with

## 6th LCA AgriFood Asia

and

## 7th International Conference on Green and Sustainable Innovation (ICGSI)

*"Global food challenges towards sustainable consumption and production"*

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Centre of Excellence on enVironmental strategy for GREEN business (VGREEN), Faculty of Environment, Kasetsart University (KU)
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# LCA4CSA: Using life cycle assessment to support co-designing climate-smart smallholder farming systems

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## Abstract

Climate Smart Agriculture (CSA) is an approach developed by the FAO and it is usually presented as a triple winning strategy to improve the capacity of agricultural systems to adapt to climate change, reduce their greenhouse gases emissions and ensuring local and global food security. This concept entails complex linkages between environmental components that need to be addressed at different scales. In order to strength CSA initiatives assessment the methodological framework LCA4CSA, based on Life Cycle Assessment (LCA) was developed to support collective co-design of climate smart farming systems. It considers the production processes at crop and farm scales. We present the LCA4CSA framework. It has been applied in a case study in the Cauca department of southern Colombia, where farmers produce coffee, sugarcane and some domestic animals. Results showed different trade-offs between indicators and pillars when considering the whole farm system in addition to crop system alone. LCA4CSA seeks to be a tool for thinking about the benefits that technical changes can bring to production systems while considering the complex dynamics of farming systems.

***Keywords:*** Climate Smart Agriculture, Farm system, crop system, smallholder

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